

REMARKS

Claims 1 - 7 and 15 - 27 are in this application and are presented for consideration. Claims 1 and 20 have been amended and claims 8 - 14 have been deleted.

Applicant acknowledges the Examiner's indication that claims 21 and 23 include allowable subject matter and would be allowable if rewritten in independent form. Applicant thanks the Examiner for indicating allowable subject matter. Applicant also wishes to point out that claim 27 depends from claim 23, and therefore claim 27 should also be considered allowable if rewritten in independent form and including all of the limitations of the base claim and any intervening claims.

Claim 20 has been amended to read better with regard to antecedent basis. It is Applicant's position that the antecedent basis is understandable from the original claim and the change only more clearly indicates the understood antecedent basis. Therefore the change to claim 20 is not a new issue.

Independent claim 6 has been rejected as being obvious over Lovell in view of Sarma.

The rejection states that Lovell differs from the claimed invention by not showing connecting surfaces with elevated contact metallizations. The rejection then uses Sarma with regard to Fig. 9 and elements 609. Applicant has reviewed Sarma, and notes that elements 609 in Sarma are described as being conductors similar to elements 60, 603, and 604. Applicant finds no indication in Sarma that elements 609 are elevated contact metallizations. Applicant notes that in several of the other rejections, element 309 of Sarma is equated with the contact metallizations.

The rejection states that it would have been obvious to incorporate the teaching of Sarma into the device of Lovell because it provides interconnection in the upper surface of the substrate with another device. Applicant notes that U.S. patent regulations require that the suggestion or motivation to combine references must be found in the prior art or general knowledge in order for the combination to be obvious. Applicant finds no suggestion or motivation for this combination in the prior art, and the rejection does not indicate where in the prior art such suggestion or motivation can be found.

Applicant's review of Lovell finds that Lovell describes a conductive path which has high electrical resistance and is used for heating the surfaces of objects. Applicant finds no suggestion or motivation in Lovell for adding contact metallizations to the device of Lovell. Instead Lovell appears to teach away from contact metallizations by describing a non-conductive coating 4, or substrates 3 and 6 which are non-conducting. Lovell therefore appears to lead a person away from having contact metallizations, and instead to have a device which is completely insulated.

Applicant also finds no suggestion in Sarma for adding contact metallizations to the heating strips of Lovell. Lovell describes electrical module 209 connected to conductors 609. However conductor 609 are not indicated to be heating strips. Applicant finds no indication in Sarma of any benefit of connecting 209 to heating strips, such as in Lovell.

Lovell also indicates that non-conductive coatings should be applied to the high temperature conductive resistant coating in order to prevent short circuiting, column 10 lines 64 - 67. Therefore the person of ordinary skill in the art would not be led to incorporate any

contact metallizations from Sarma into Lovell since this would defeat the purpose of the non-conductive coating in Lovell.

The heating strips in Lovell are much different from the conductors 609 in Sarma. The heating strips in Lovell are formed to create high temperatures, up to 2,000°F. Such temperatures would be very harmful to many electrical modules, especially the semiconductor chips, and other modules of Sarma, especially as described in column 1 lines 27 - 36.

Applicant also notes that if the devices of Sarma are applied to the heating strips of Lovell, then the heating strips of Lovell will not evenly heat. Lovell requires that the heating strips evenly apply heat over the surface of the object, and if devices of Sarma are applied to Lovell, portions downstream of the devices would not receive the same heating as portions upstream of the devices. Therefore applying devices would not receive the same heating as portions upstream of the devices. Therefore applying the devices of Sarma to Lovell, would cause Lovell to not operate properly. Such a modification is not an indication of obviousness.

Applicant further finds no suggestion or motivation in the general knowledge of the person of ordinary skill to incorporate any contact metallizations from Sarma into Lovell, since such teachings are against teachings of Lovell, and would cause short circuits and uneven heating in Lovell. It is Applicant's position therefore that claim 6 and its dependent claims are not obvious in view of Lovell and Sarma.

Claim 7 sets forth that the contact strands are in contact with the contact metallizations of the chip and are connected with the terminals of a coil unit. Applicant finds no teaching nor suggestion in any of the prior art of placing a coil unit on the heating strips of Lovell.

Applicant finds no benefit in applying a coil unit to the heating strips of Lovell, and therefore claim 7 further defines over the prior art.

Claim 22 has also been rejected as being obvious in view of Lovell and Sarma. Claim 22 sets forth the step of providing a chip with contact metallizations and connecting the contact metallizations with the electrically conductive strands. As described previously, it is Applicant's position that there is no suggestion or motivation in the prior art, or the general knowledge, to incorporate a chip with contact metallizations and connecting the contact metallizations with electrically conductive strands. The high temperatures of the conducting strips of Lovell would destroy many chips. Also the teaching of non-conductive coatings on opposite sides of the high temperature conductive resistive medium of Lovell leads a person away from making connections to the high temperature conductive resistive medium of Lovell. Furthermore the addition of any chips and contact metallizations to Lovell would cause downstream portions of the heating strip to not heat to the same degree as the upstream portions. Since there is no suggestion of the prior art and there would be no benefit, claim 22 therefore also defines over the prior art.

Claims 1 and 2 have been rejected as being anticipated by Pavio. Claim 1 has been amended to include the adjective "flexible" relative to the carrier film. Support for this feature can be found on page 10 first paragraph of the specification.

Contrary to the balun known from Pavio describing a dielectric substrate 11 being covered on each surface by two co-parallel strips or sheets, the inventive chip carrier according to claim 1 has a flexible carrier film forming the substrate. The entire content of the Pavio

document does not give the slightest hint to any flexible characteristics of the substrate. Instead, there is one version of the balun shown in Figures 23-27 with a substrate 211 not only has conductive sheets mounted on the surfaces, but has a "transverse electric conductive strip 250 embedded in the substrate mid-way between the conductive sheets on the top planar surface and ...the bottom planar surface" (column 11, line 16-20). Thus if there is any suggestion or motivation to one of ordinary skill in the art with respect to the material characteristics of the substrate, this only concerns the embedding capabilities of the substrate. As one of ordinary skill in the art knows, embedding capabilities are typical characteristics of moldable materials like epoxy resins. A flexible film substrate could never accommodate a conductive sheet or strip in an embedded arrangement.

Even further, if the person of ordinary skill in the art was looking for a solution to the problem of designing a chip carrier for a chip module which exhibits a particularly simple design and hence opens the door to particularly cost effective manufacturing, as is disclosed in the present specification on page 3, lines 13-16, the person of ordinary skill would never refer to a document relating to the design of baluns being electrical devices for transferring electrical signals between a variety of electrical devices particularly being designed for transferring a wide range of frequencies. The person of ordinary skill in the art knows about the totally different dimensions of a carrier substrate designed for being contacted with a small scale chip and a balun designed in a fashion comparable to a cable for transferring frequency signals.

It is Applicant's position that claim 1 would also not be obvious in view of Lovell. In

Lovell, the substrate material has completely different scale dimensions for the high temperature conductive resistant coating 5 and the two conductive strips 2. This would be deter the person of ordinary skill in the art from any suggestion or motivation to modify Lovell to suggest the present invention.

Apart from the difference in scale of the conductive strips, the strips 2 of Lovell do not serve for connection to any device, but only serve to connect the coating 5 to the power supply. Since the conductive strips 2 are covered on both sides by flexible substrates 3 and 6 respectively (Figure 1, column 7, lines 19-56), a surface connection of the strips to any electrical device mounted on the substrate would not be possible because of the insulating effect of the substrate.

The aforementioned differences in scale, and in use, is evident from Figures 7 through 9 and 9A of Lovell. As Figure 7 shows, the heating device is applied directly to an article of pottery. Figure 8 shows a brick provided with the heating device, and Figures 9 and 9A show a cookware article being provided with the heating device. Figure 9A in particular shows the connection of the conductive strips to a power supply for energizing the coating. Therefore Lovell leads a person away from claim 1, and claim 1 cannot be obvious in view of Lovell.

Applicant added the features to claim 1 to further emphasize the nature of the present invention. It is Applicant's position that these changes are rather small and should not require additional search and consideration.

Applicant again thanks the Examiner for indicating allowable subject matter. If the Examiner has any comments or suggestions which would further favorable prosecution of this

application, the Examiner is invited to contact Applicant's representative by telephone to discuss possible changes.

At this time, Applicant respectfully requests reconsideration of this application, and based on the above amendments and remarks, respectfully solicits allowance of this application.

Respectfully submitted
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DATED: October 8, 2004
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